

General Examination

✂ General History

✂ Vital Signs:

- Temperature
- Pulse
- Blood Pressure
- Respiratory rate

✂ General overview:

- Appearance
- Built
- Consciousness / color
- Decubitus
- Expressions

✂ Systemic overview:

- Head and Neck
- Upper limb
- Lower limb
- Other systems except that of local examination

VISIT...

LANZAROTE
Caliente.COM

GENERAL HISTORY

The standard history taking format is as follows:

- | | |
|---|-------------------------|
| 1- Identification data (personal history) | 2- Chief complaint |
| 3- History of the present illness | 4- Past medical history |
| 5- Family history | |

A-Personal History

1- Name:



Insist about

recording the whole name including the family name, also to be more familiar with the patient to gain confidence

2- Sex:

Some diseases are common in females as:

- | | |
|---------------------------|------------------------------|
| ✧ SLE | ✧ Primary billiary cirrhosis |
| ✧ Myxoedema | ✧ Chorea |
| ✧ Calcular cholecystitis. | |

Some diseases are common in males as :

- | | |
|--------------------------|--------------|
| ✧ Coronary heart disease | ✧ COPD |
| ✧ Bronchogenic carcinoma | ✧ Hemophilia |

3-Age:

Some diseases are common in children and young adults as :

- | | |
|-----------------------|--|
| ✧ Valvular lesions | ✧ Acute leukemia |
| ✧ Haemolytic anemias | ✧ Poliomyelitis, Duchenne's myopathy , Friedreich's ataxia |
| ✧ Infective hepatitis | |
| ✧ Acute purpura | |

Some diseases are common in old age as

- | | |
|--|------------------------------|
| ✧ Carcinoma | ✧ Cor pulmonale |
| ✧ Atherosclerosis , coronary heart disease | ✧ Cerebro-vascular accidents |
| | ✧ However no age is immune. |

4- Occupation:

Certain occupations may expose the patient to certain diseases

- ✧ Lead workers: lead poisoning and peripheral neuropathy
- ✧ Glass workers: silicosis
- ✧ Drivers : disc prolapse
- ✧ Deep x-ray irradiation : bone marrow depression and infertility
- ✧ Health personnels: infections

5- Marital status:

- ✧ Single , married , divorced , widower (widow)
- ✧ Number of children and age of the youngest.

6- Residence: Not only where the patient was born but also where the patient is living

7- Habits:

a- Smoking:

- ✧ Type, number of cigarettes / day , duration
- ✧ Smoking index = Cig/day X duration in years

What Are The Hazards Of Smoking?

- ✧ Chronic bronchitis and COPD
- ✧ Bronchogenic carcinoma
- ✧ Ischemic heart disease (IHD)
- ✧ Peripheral vascular disease
- ✧ Cancer (Lip, Tongue, Pharynx, Larynx, Esophagus, Stomach, Bladder)

b- Alcohol:

What Are The Hazards Of Alcohol Consumption?

- ✧ Mallory-Weiss syndrome
- ✧ Alcoholic cirrhosis
- ✧ Acute hemorrhagic pancreatitis & chronic pancreatitis
- ✧ Peptic ulcer & gastritis
- ✧ Wernicke-Korsakoff syndrome
- ✧ Polyneuropathy
- ✧ Cardiomyopathy

c- Others as opium and its derivatives

8- Handedness: to identify the dominant hemisphere

B- Complaint

Short & No Medical Terms

- In patient's own words if possible, 1-2 sentences, statement of problem and duration.

C- Present History

The 1st question to start with, is (*When were you last symptom free ?*) and from that date the present history starts.

آخر مره كنت سليم امتي؟؟

Characters of the present history:

- Long
- Use medical terms
- Mention all complaints and related symptoms
- Arrange these symptoms chronologically
- Complete analysis of each symptom:
 - Onset
 - Course
 - Duration
 - Associated symptoms
 - Investigations
 - Treatment
- Review for the other systems

Types of Onset:1-Acute onset

- *Dramatic:* within seconds or minutes e.g. cerebral hemorrhage or embolism
- *Sudden onset:* within hours e.g. cerebral thrombosis
- *Rapid onset :* within days e.g. inflammation

2-Gradual onset: (Within weeks, months or years) e.g. degenerative diseases and tumors3-Accidental onset: (Discovered by the patient by chance)

e.g. breast mass , mass in inaccessible site as back

Types Of The Course:

1. **Regressive:** as inflammation , vascular , trauma
2. **Progressive:** as malignancy and degenerative diseases
3. **Stationary:**
4. **Remission and exacerbation:** as autoimmune diseases (SLE, rheumatoid arthritis), disseminated sclerosis.

D-Past History

- **Common diseases** as rheumatic fever, Tuberculosis (T.B), Diabetes (D.M), Bilharziasis, Hypertension (HTN).
- **Operations** (if not related to the present history).
- **Drug intake & blood transfusion**
- **Allergy to known drug**

E- Family History

- ✧ Similar condition in the family
- ✧ Common diseases: HTN, DM, TB.
- ✧ Positive consanguinity.

GENERAL EXAMINATION

Vital signs	General overview (A,B,C,D,E)	Systemic overview
1. Temperature	A- Appearance	1. Head and neck
2. Pulse	B- Built	2. upper limb
3. Blood pressure	C- Consciousness/Colors	3. Lower limb
4. Respiratory rate	D- Decubitus	4. Other systems except that of local examination
	E- Expression	

Vital Signs

1) Temperature

There are two methods to measure body temperature:

1-Surface temperature over skin

2-Core temperature in cavity or lumen

The core temperature is higher than the surface temperature and this difference varies between 0.5-2 °c and if increases, it indicates poor skin perfusion (vc) e.g. heart failure or shock

- The most accurate method is done, through esophageal probe or tympanic temperature.
- **Normally** ☞ Oral temperature = 36.5-37.2 °C,
☞ Anal T=subtract 0.5 °C & Axillary T = add 0.5 °C
- **Normally** there is diurnal variations less than 1°C
- **Normally** every increase in body temperature by 1 °C , increases the HR by 10-15 bpm due to the effect of the temperature in diastolic depolarization of action potential of the SAN leading to more steep rapid diastolic depolarization.

Fever with Relative Tachycardia: (Inappropriate tachycardia) in rheumatic or infective carditis. It means as temperature increases by 1°C, there is increase in HR by more than 15 bpm.

Fever with Relative Bradycardia:

It means as the temperature increases by 1 °C, there is increase in HR by less than 10 bpm as : viral infection and typhoid fever.

Fever with Bradycardia:

Patient presents with high temperature with slower HR e.g.

1. Infective endocarditis or rheumatic carditis affecting AV bundle (A/V block)
2. Brain abscess increasing the intracranial tension (ICT) and causes Cushing reflex (HTN + bradycardia)
3. Bradycardiac patients with fever of any cause. i.e. association

TYPES OF FEVER: (Oral & Written)

	Criteria	e.g
1. Continuous	The temperature is always high with daily fluctuation less than 1 °C	*typhoid *pneumonia *infective endocarditis
2. Remittent	The temperature is always high with daily fluctuation more than 1 °C	*empyema *SLE *infective endocarditis
3. Intermittent	The temperature falls to the normal level one or more during the day	*benign tertian malaria *infective endocarditis
4. Relapsing(cyclic)	Days of fever alternating with days of normal temperature	*brucellosis *Hodgkin.

Subnormal Body Temperature: (Hypothermia) T. Less than 36.5° C as in:

1. Shock
2. Myxoedema
3. Excessive alcohol intake
4. Morphine over dose
5. Drowning

Conditions In Which You Can Not Measure Temperature Orally

(Indications of temp. per anus):

- * Infants
- * Convulsions
- * Painful mouth lesions(ulcers)
- * Coma
- * Mental retardation
- * Mouth breather

شفوی هام

How To Measure Temperature?

- 1-Sterilize the thermometer in 70% alcohol for at least 20 minutes
- 2-Put it in the mouth , axilla , or rectum for at least 3 minutes.

2) Pulse

How To Examine Radial Pulse ?

By using the middle 3 fingers while the arm is pronated to relax the fascia at the cubital fossa and thus to avoid the stretch of the brachial artery.



Examination Of The Pulse Using 3 Fingers

How To Comment On The Pulse ?

1. Rhythm.
2. Rate.
3. Volume.
4. Special characters
5. Force.
6. Tension.
7. Equality on both sides.
8. Condition of the vessel wall.
9. Other arterial pulsations.

1) Rate:

- ◆ Normally the HR is 60-100 bpm
- ◆ Tachycardia more than 100 bpm
- ◆ Bradycardia less than 60 bpm

Causes Of Tachycardia:

- **Physiological**
 - ⇒ Exercise
 - ⇒ Emotions
- **Pathological**
 - ⇒ Fever
 - ⇒ Thyrotoxicosis
 - ⇒ Heart failure
 - ⇒ SVT, VT
 - ⇒ Shock
 - ⇒ Anemia
 - ⇒ Hypovolemia
- **Pharmacological**
 - ⇒ Sympathomimetics as *adrenaline, ephedrine, amphetamine*
 - ⇒ Parasympatholytic as *atropine*

Causes Of Bradycardia:

- **Physiological**
 - ⇒ Athletes, deep sleep
- **Pathological**
 - ⇒ Obstructive jaundice
 - ⇒ Hypothyroidism
 - ⇒ Different types of heart block,
 - ⇒ Intracranial hypertension (↑ICP)
- **Pharmacological**
 - ⇒ B-blocker, digitalis, ca-channel blocker

2) **Rhythm:**

i.e. regular or irregular

Causes Of Irregular Rhythm:

- ➔ Extrasystoles
- ➔ AF

	AF	Extrasystole
Irregularity	Marked	Occasional
Neck veins	Absent A wave	Preserved A wave
Pulse deficit	More than 10/min	Less than 10/min
Exercise	Increased irregularity	Decreased irregularity
1st sound	Variable	Normal with occasional irregularity
ECG	Diagnostic	Diagnostic

نظری و عملی

3) **Volume (pulse pressure)**

The difference between the systolic and the diastolic BP normally, 20 to 60 mmHg

Causes Of Big Pulse Volume: (↑SBP or ↓DBP)

💧 **Increased SBP (Vent. contraction)**

- Aortic incompetence
- Thyrotoxicosis
- Bradycardia including CHB

💧 **Decreased DBP (Peripheral resistance)**

- Anemia
- Hypoxia
- Pregnancy
- Vasodilator drug
- Sepsis due to vasodilatation
- Aortic Incompetence.
- Liver cirrhosis *due to accumulation of VD substances*



Causes Of Small Pulse Volume (Weak Pulse)

- Heart failure
- Hypovolemia
- Myocardial infarction.
- Pulmonary hypertension.
- Pericardial diseases as effusion or constrictive pericarditis
- Severe valve stenosis as MS, AS.

Causes of variable pulse volume:

- AF
- Extrasystole
- Variable heart block
- Pulsus alternans

4) **Force:**

It is the pressure needed to occlude the pulse and it roughly estimates the SBP.

5) **Tension:**

It is the pressure needed to feel the best pulsations and it roughly estimates DBP.

6) Special characters :

شفوی

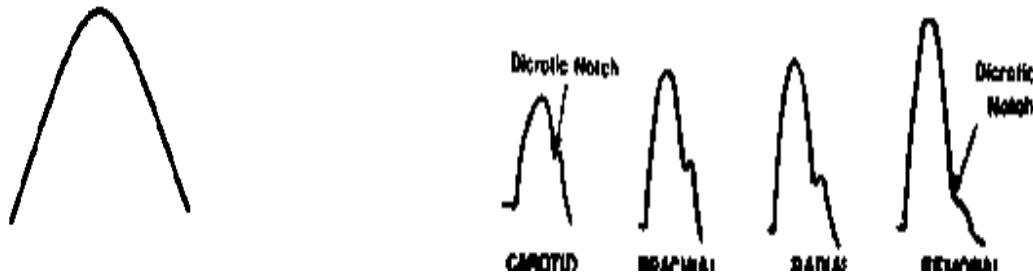
- Pulsus alternans
- Pulsus bisphorians
- Pulsus paradoxus

عملی

- Pulse deficit
- Water hammer pulse
- Plateau pulse

➤ Normal pulse :

Gradual ascent and gradual descent with normal pulse volume



➤ Water-hammer pulse, (Collapsing pulse) Bounding pulse;

Sharp sudden ascent and sudden descent with big volume.

Causes: **same as big pulse volume**

➤ Plateau pulse (pulsus tardus et parvus):

Slow ascent and slow descent with small pulse volume.



Causes: **Same causes of small pulse volume especially aortic stenosis**

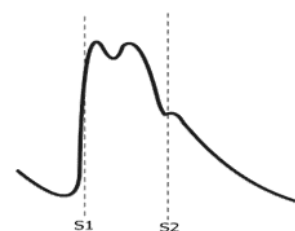
➤ Pulsus bisphorians : Pulse with two palpable peaks

The 1st peak (percussion wave) is due to transmission of the pressure of isometric ventricular contraction through the closed aortic valve to the aortic blood in early systole, the 2nd peak (tidal wave) is due to recoil of vascular bed. This normally happens in diastole (diacrotic wave) but when left ventricular empties slowly or is obstructed from emptying, the tidal wave occurs in late systole. This resulting a palpable double systolic peaks.

It is detected in large arteries as brachial artery.

Causes:

- **Double aortic lesion**
- **HOCM** (*Hypertrophic Obstructive Cardiomyopathy*)



Bisferiens pulse

➤ **Pulsus paradoxus:**

- ✎ Normally during inspiration , the pulse volume decreases due to decrease in SBP (but less than 10 mmHg) thus it is difficult to be detected . It is due to the decrease in ventricular contraction during inspiration which in turn due to:
 - More negative intrathoracic pressure interferes with left ventricular (LV) contraction
 - The lung accommodates more blood during inspiration thus decreasing venous return to the Lt side

Pulsus paradoxus is considered as exaggeration of the normal (*decrease in SBP more than 10 mmHg during inspiration*)

Causes:

- **Decreased cardiac filling as pericardial effusion and constrictive pericarditis**
- **Increased lung capacitance as COPD , severe asthmatic attack**
- **Pulmonary embolism.**

- **Clinically**, it can be detected by palpitation the pulse volume of femoral artery during regular respiration & deep inspiration or using syphgmomanometer by measuring SBP during regular respiration & deep inspiration (in pulsus paradoxus, the fall in SBP will be more than 10 mmHg).

➤ **Pulsus Alternans :**

Strong beat followed by weak one with equidistance



Causes: LV failure there is alternation between strong & weak contractions which in turn due to contraction at all cardiac muscle fibers (healthy & disease) giving rise to strong contraction & followed by weak contraction due to contraction of only healthy fibers & is mainly due to the prolonged recovery time of damaged myocardium.

Clinically: It can be detected by palpation of pulse or measuring BP by elevation of the cuff pressure above SBP then very gradual release of pressure till feeling the pulse (at this pressure hold the cuff inflation and count the pulse) then remove the cuff and recount the pulse if it is doubled , so pulsus alternans is diagnosed.

☞ Pulsus bigeminus :

Strong beat followed by weak beat then pause.



Causes: ☞ Hypokalemia ☞ Digitalis toxicity ☞ MI

☞ Pulse deficit :

Apical pulse more than radial pulse

- In AF it counts more than 10 beats/min
- In extrasystoles it counts less than 10 beats/min

NB

Radiofemoral delay: Delayed pulse in femoral artery than in radial artery as in aortic coarctation associated with decrease in blood pressure in femoral artery than radial artery.

7) Equality of pulse volume:

Both radial arteries should be palpated at the same time.

Causes of unequal pulse volume: (Oral & written)

☞ Outside the wall:

- ☑ Cervical rib
- ☑ Pancoast tumor

☞ In the wall:

- ☑ Aneurysm (Aortic or Subclavian)
- ☑ Dissecting aorta involving the left subclavian
- ☑ Aortic arch coarctation.

☞ In the lumen:

- ☑ Thrombosis
- ☑ Embolism

8) Condition of the vessel wall : (using 3 finger)

- ✎ Normally the vessel can not be felt , In atherosclerosis it becomes cord like
- ✎ **(Mönckeberg arteriosclerosis):** medial calcific sclerosis where there is calcification of muscular arteries. It can be detected clinically & radiologically.

9) Other pulses:

Including the Carotid , brachial, dorsalis pedis , posterior tibial, femoral and popliteal arteries



Popliteal artery



Femoral artery



Posterior tibial

3) Blood pressure

Normal BP ranges : Systolic from 90 to 140 mmHg
Diastolic from 60 to 90 mmHg

- ✎ **Systolic BP:** is the pressure exerted by the blood (ejected by LV) on the arterial wall during systole (mainly depends on LV contraction)
- ✎ **Diastolic BP:** is the pressure exerted on the arterial wall as a result of elastic recoil of the aorta (it mainly depends upon the peripheral resistance).

✎ How To Measure The Bp:

- The BP cuff bladder should be at least 20% wider than the arm
- The patient should be relaxed and the arm at the level of the heart
- Wrap the cuff at least 2.5 cm above the cubital fossa
- Palpate the brachial pulse medial to the biceps tendon and use this area for auscultation
- First assess the systolic BP by palpation of the radial artery to avoid auscultatory gap.
- Auscultate for the SBP by raising the pressure of the sphygmomanometer until the brachial pulse is obliterated then deflate the cuff slowly at a rate of 3 mmHg / sec
- The point at which the sound appears is taken as SBP
- Then continue to deflate till the point of diastolic muffling and the point of diastolic disappearance which is usually recorded as DBP
- Normally the difference between those two points (muffling/disappearance) is less than 10 mmHg and if more, the point of muffling is used as the DBP (as in most cases of hyperdynamic circulation and VD e.g. pregnancy, AI, hypoxia , A-V fistula)

✎ The Auscultatory Gap:

- ✎ Period in which the BP is palpated but can not be auscultated as (some cases of hypertensives, AS)
- ✎ The actual cause of this gap is unknown , and to avoid this gap 1st measure the SBP by palpation then auscultation.

✎ Kortkoff Sounds: (5 Phases)

Phase 1	The 1 st appearance of sounds marks SBP
Phase 2,3	Increasing loud sounds
Phase 4	Abrupt muffling of the sounds
Phase 5	Disappearance of the sounds

NB. The difference between both upper limbs ranges between 5 to 10 mmHg

✎ Causes of larger difference (more than 15 mmHg)

- ✎ Same causes of unequal pulse volume importantly to exclude life threatening aortic dissection.

NB. The normal difference between the UL and the LL is less than 20 mmHg

✎ Indications to measure the BP from the LL:

- To diagnose AI (increased difference) "HILL sign"
- To diagnose coarctation of the aorta (decreased difference)
- To diagnose LL ischemia



✎ Uses of sphygmomanometer :

- Measure the BP
- Diagnosis of pulsus alternans, paradoxus
- Diagnosis of latent tetany (Trousseau's sign)
- diagnosis of thrombocytopenic purpura (Hess' test)
- Diagnosis of aortic coarctation (Hill's sign)
- Tourniquet in closed venesection & to stop bleeding (hemostasis)



✎ Orthostatic hypotension & its measurement:

The BP is measured in the supine position The supine patients sits up with legs down or stand for 1 min. and the BP is remeasured. The drop in BP of 15 mmHg or more is considered as orthostatic hypotension that occurs in:

- Autonomic neuropathy especially diabetic neuropathy,
- Hyponatremia (Addison's disease)
- Hypovolemia
- Autonomic neuropathy (especially diabetic)
- Prolonged recumbence
- Pregnancy
- Lumbar sympathectomy
- Use of hypotensive drugs
- Sympathetic system blockers

4) Respiratory Rate

- The normal respiratory rate ranges between **12 to 18 bpm.**
- You should account while attracting the attention of the patient to something otherwise the RR.
- For abnormal rate and pattern **refer to chest examination.**

GENERAL OVERVIEW

Appearance : (*Facies*) → Problems in patient's face due to organic diseases

- ⇒ **Normal**
- ⇒ **Toxic facies:** flushed with VD as acute infection
- ⇒ **Emaciated:** (wasted temporalis) as chronic illness(it is termed as cachexia)
- ⇒ **Mask face:** with depressed affect (*parkinsonism*)
- ⇒ **Puffy eyes:** (*Nephrotic syndrome*)
- ⇒ **Ape face:** large protruding jaw, large tongue, thick greasy skin (*Acromegally*)
- ⇒ **Lid retraction** , exophthalmous as (*Hyperthyroidism*)
- ⇒ **Moon face,** erythema with acne , hirsutism in Cushing syndrome

Built

We should comment on the weight and height

- ✧ **Weight:** average , overweight , underweight
- ✧ **Height:** average , dwarf, giant.

More details and abnormal built will be discussed in Dwarfism and Gigantism.

Colours:

Blue	Cyanosis
Blue-gray	Haemochromatosis (bronzed)
Yellow	Jaundice , caroteneemia (see abdomen)
Pale	Anemia (conjunctiva , oral mucosa)

Cyanosis

Definition:

- Bluish discoloration of skin and mucous membranes due to increased reduced HB more than 5 gm %
- The normal level of the reduced HB is 2.1-2.4 gm %

Types of cyanosis:

	CENTRAL	PERIPHERAL
Definition	The blood leaves the heart containing bad quality HB (reduced HB more than 5 gm %)	The blood leaves the heart containing normal level of reduced HB but due to its stagnation in the peripheral circulation allows more time for O2 extraction by tissues so raising the reduced HB
causes	<u>CVS</u> Congenital cyanotic heart diseases (F3,F4,Eisenmenger) <u>Pulmonary</u> *COPD *acute pulmonary edema *IPF * pulmonary embolism *liver cirrhosis	*heart failure *Cold *peripheral vascular disease as Raynauds
Distribution	All the body including tongue	All <u>except tongue</u>
Hands	Warm (hypoxia induced VD)	Cold (VC)
Warming hands	No effect	Cyanosis improves
Clubbing	Present in long standing cases	Absent
Po2	Low	Normal
O2 inhalation	Improves only pulmonary causes	No effect

Differential Cyanosis: cyanosis in the lower limb without cyanosis in the UL as in :

- ◆ PDA with pulmonary HTN (*Eisenmenger*)
- ◆ PDA with preductal coarctation of aorta

Differential diagnosis of central cyanosis:

- ◆ **Chemical cyanosis** as methemoglobinemia & sulph-hemoglobinemia due to decreased O2 carrying capacity
- ◆ **Cushing syndrome** and other causes of polycythemia

Why peripheral cyanosis does not affect the tongue?

Because the blood never stagnates in tongue as :

- ✎ Active organ → VD
- ✎ Warm oral cavity → VD
- ✎ Contains no VC nerve fibers



Jaundic

Definition: Yellowish discoloration of the skin , mucous membranes and sclera due to increased total bilirubin more than 2 mg % (see GIT)

- ▶▶ It is deposited in sclera due to high affinity of elastic tissue of sclera to bilirubin.

DD of jaundice:

- **Caroteneemia :** Due to
 - ✎ Increased intake of carotene in vegetables
 - ✎ Diabetes mellitus
 - ✎ Myxoedema

it appears in palms and soles , face, may be in mucous membranes

Pallor

Definition : decreased visibility of oxyhemoglobin

Causes :

- ✎ Anemia.
- ✎ VC (HF, shock , sympathetic)
- ✎ Increased skin thickness (oedema, myxoedema)

Sites:

- ✎ Palm
- ✎ Oral mucosa
- ✎ Lips, tongue* Conjunctiva but not in Egypt (endemic trachoma)

Conscious Level:

 See Neurology sheet.

Decubitus:

It is the position preferred by the patient in bed

Normal	Flat with comfort
Orthopnea	Dyspnea on lying flat improves on sitting down as in left sided heart failure
Prayer position	Pericardial effusion Mediastinal syndrome with compression from front Posture of drainage in bronchiectasis
Squatting	Fallot tetralogy (F4)
Lateral decubitus	Pleurisy (same side) Lung abscess (postural drainage)
Opisthotonus	High arched back as in : ▪ strychnine poisoning ▪ tetanus ▪ meningitis

Expression:

(Problems in the face due to neuropsychiatric diseases)

Normally we react to the surroundings accordingly , however special expressions (due to neuropsychiatric diseases) should be noticed :

- ✧ Mask face in parkinsonism
- ✧ Depression
- ✧ Elation
- ✧ Emotional lability in chorea
- ✧ Staring look in thyrotoxicosis
- ✧ Irritability and anxious in thyrotoxicosis
- ✧ Apathy in myxaedema

SYSTEMIC OVERVIEW

1- HEAD

⇒ Skull

- * Shape (acromegally, square)
- * Skull masses
- * Depressed fractures
- * Bruit over the cranium

⇒ Special appearance (see before)

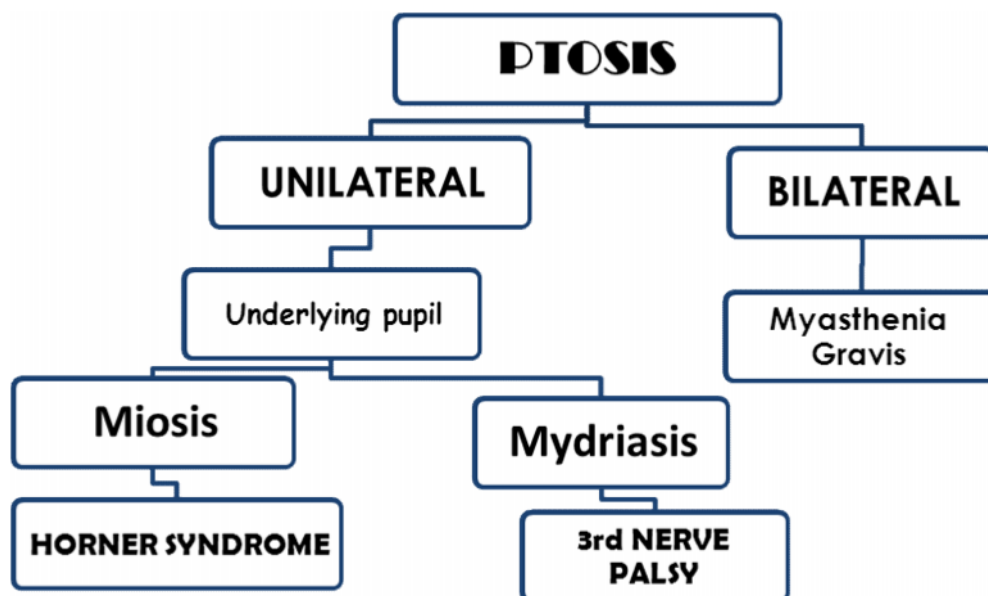
⇒ Eye:

- ♦ Hair loss in the outer third of eyebrows as in myxoedema, leprosy.
- ♦ Xanthomata in hypercholesterolemia.

NB: Other types of xanthomatosis especially seen in familial hyperlipidemia [gene 19 defect (LDL receptor)]

- i. Palmer ii. Tuberous over elbow & knee iii. Eruptive in the back*

♦ Ptosis:



♦ **Puffiness of the eye lids:**

✍ As part of generalized edema:

- Renal impairment
- Hepatic failure
- Heart failure
- Nutritional

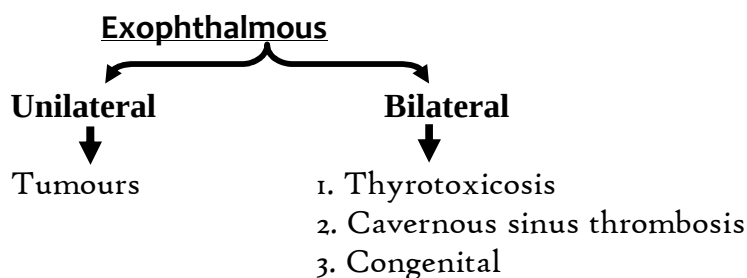
✍ Local causes:

- Myxedema
- Inflammation

✍ Pulmonary causes: all causes of chronic cough

♦ **Dark ring:** No pathological illness can be mentioned but it may be related to excessive fatigue, lack of sleep, normal variant.

♦ **Eye balls**



♦ **Sclera:**

- Jaundice (in day light)
- Blue sclera in (TB, congenital glaucoma, osteogenesis imperfecta)

♦ **Conjunctiva:**

- Pallor (not in Egypt)
 - Cyanosis
 - Subconjunctival hemorrhage
- Blood diseases
 - Hypertension
 - Subacute bacterial endocarditis
 - Chronic cough

♦ **Cornea**

- Vascularization (ariboflavinosis)
- Opacity (trauma, chloroquine)
- Arcus senilis white peripheral in elderly
- Kayser-Fleisher ring: greenish gray ring in Wilson disease
- Arcus Juvenilis white arch in young in case of familial hyperlipidemia.

♦ Pupils (*see neurology*)

1. Miosis, mydriasis
2. Reaction to light
3. Equality on both sides

♦ Lens

- Subluxation as in *Marfan's syndrome*
- Cataract as in :

* <i>Diabetes mellitus</i>	* <i>Cretinism</i>	* <i>Scleroderma</i>
* <i>Mongolism</i>	* <i>Myotonia atrophica</i>	* <i>Hyperparathyroidism</i>

♦ Fundus examination:

- Hypertensive, atherosclerotic, diabetic changes
- Papilloedema in increased ICT
- Retinal hemorrhage and exudates

⇒ The nose:

- Size : enlarged in acromegally
- Saddle nose (depressed bridge) as congenital syphilis
- Working ala nasi : in respiratory failure
- Discharge: watery as CSF rhinorrhea
- Redness of the tip : SLE, Alcoholism
- Sulphur granules : yellow raised follicles around the sides of the nose
- dried sebaceous material in ariboflavinosis
- Nasolabial folds: obliterated in facial palsy

⇒ The butterfly area:

- Malar flush In MS (violet due to VD 2ry to hypoxia)
- Butterfly erythema SLE
- Hyperpigmentation
 - * pregnancy (*cloasma gravidarum*)
 - * pellagra
 - * SLE

⇒ The mouth:

- 1) Lips: for pallor, cyanosis, chielosis (*dry cracked in Ariboflavinosis*)
- 2) Angular stomatitis : in iron deficiency , ariboflavinosis.
- 3) Gums:
 - Gingivitis in DM, HSV, spirochetes
 - Bleeding in bleeding tendency, vit C deficiency
 - Gum hypertrophy in pregnancy and phenytoin ttt

- Blue line running along the edge of the gum as in lead exposure less common with bismuth or mercury
- Aphthous ulcer

4) Teeth:

- ✎ Ask the patient to grimace to show the teeth if the patient wears denture ask him to remove them and examine for:

1. **colors:**

- **tartar deposition** (precipitated calcium salt of saliva which was stained brown in smokers) mainly at lingual aspect of the lower incisor, canines
- **permanent stain** in children treated by tetracycline

2. **Dental caries**

3. **Shape:**

- 4. **Hutchinson's teeth** rare finding of congenital syphilis in which the upper two incisors are rounded separated

NB. Separated teeth of the lower jaw may occur in acromegally.

5) Tongue:

- Color: cyanosis and pallor
- Surface:
 - **coated** in fever, uremia
 - **Dry** in dehydration
- Size:
 - **Large** in acromegally, myxoedema, cretin
 - **Small** in LMNL
- papillae
 - Atrophied (red glazed) in iron & vit B12 deficiency
 - Hypertrophy (strawberry tongue) in scarlet fever

6) Palate:

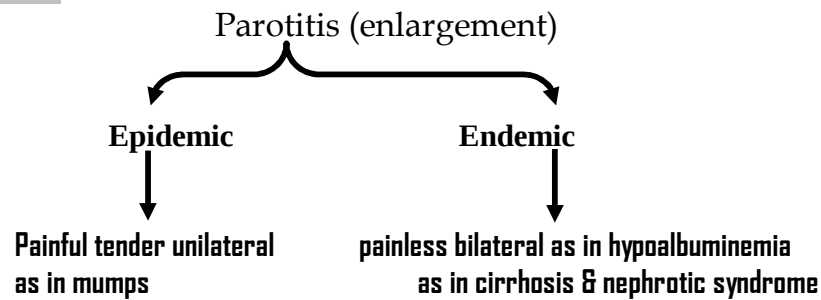
- High arched in Marfan syndrome.
- Cleft palate
- Petechial spots in ITP, IMN, leukemia
- Uvula position (central, shifted)

7) Tonsils

- Tonsillitis : enlarged , inflamed.
- Red glazed tonsils in infectious mononucleosis (IMN)
- Faucial membrane in diphtheria

8) Odour of the mouth :

Acetone	DKA
Feter hepaticus	LCF
Ammoniacal	Renal failure
Bad	SLS, cancer oesophagus , bad oral hygiene
Alcohol	Alcohol abusers

☞ Parotid gland☞ Ear:

- ☞ For tophi, small nodules that may ulcerate & discharge yellowish chalky material, as in gout.

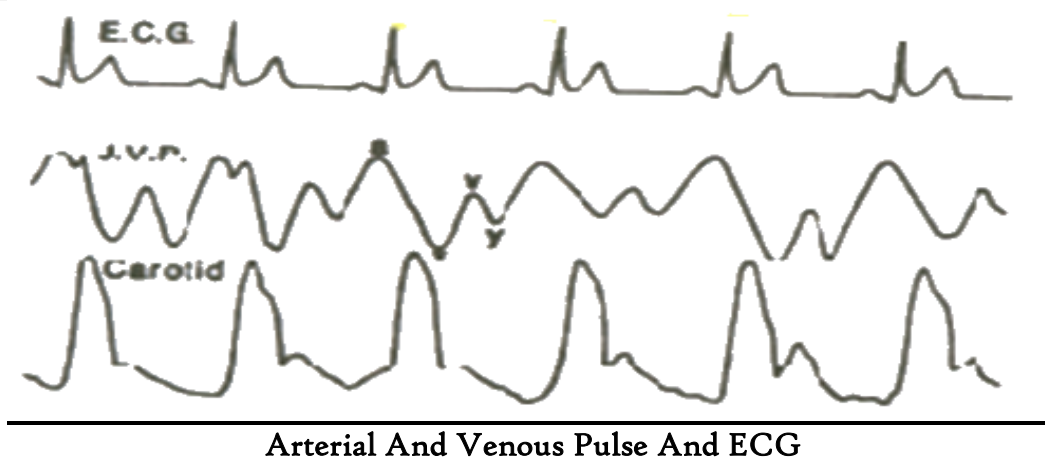
2- NECK

- **Neck position** : torticollis in extrapyramidal dystonia.
- **Neck stiffness**, rigidity in meningeal irritation
- **LN**s examination see LN sheet, thyroid.
- **Trachea** central or shifted
- **Blood vessels** (arterial , venous)

✎ Arterial and venous system of the neck:

Arterial	Venous
Medial and anterior to sternomastoid	Lateral and posterior to sternomastoid
Pulsatile (one jerk)	Wavy
Better felt than seen	Better seen than felt
Not affected by respiration	Decrease by inspiration, engorges by valsalva
Not affected by position	Changes with position
Not affected by hepatic pressure	Pressure increases with hepatic pressure (HJR)

✎ Pulsations:



✎

✎ Hepato jugular reflux : (HJR)

►► The test is done to differentiate between arterial and venous pulsations (only in venous) also it differentiates between normal venous pressure and congested neck veins as in Rt sided HF.

- Place the patient in a supine position with mouth opened breathing normally
- Place the Rt hand over the liver in the RUQ
- Apply firm progressive pressure for 30 to 60 seconds
- Normally the JVP is elevated for less than 1 cm but transitionally and falls to baseline level during later part of compression
- Sustained elevation more than 1 cm in JVP height is pathological

✎ **Carotid pulsations:**

Cause of prominent carotid pulsations:

- ✎ The same causes of big pulse volume

Causes of thrill on the neck:

- ✎ Associated with thrill over the base of the heart (AS, PDA)
- ✎ Not associated with thrill over the base of the heart (AR , thyrotoxicosis)

✎ **Neck veins:**

There are two venous systems in the neck external and internal jugular

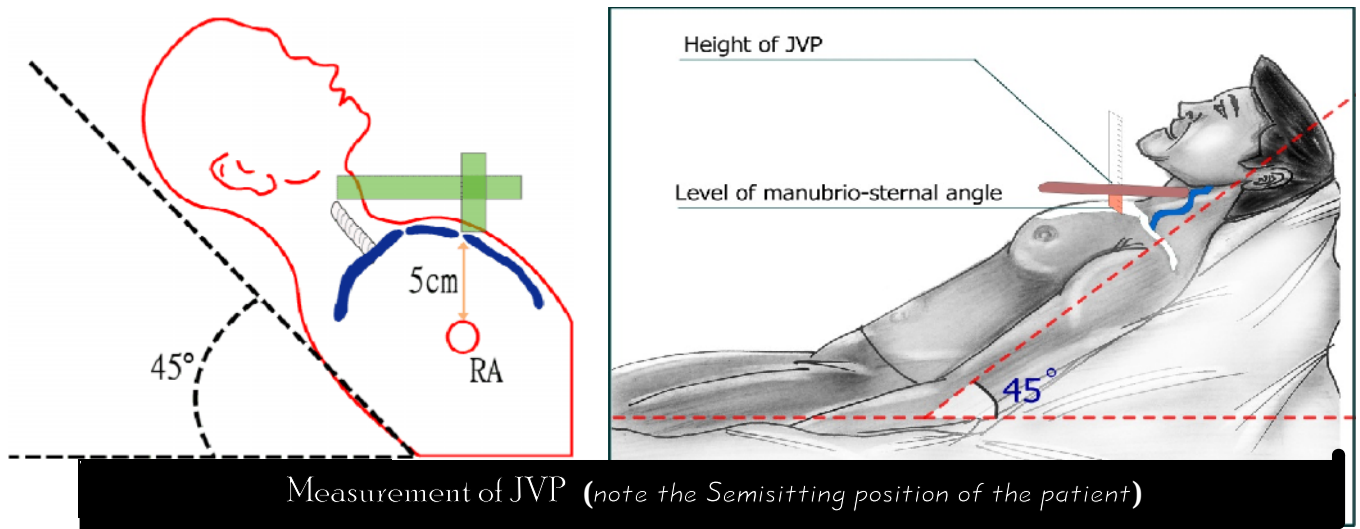
External jugular	Internal jugular
Less wavy	More wavy
Less accurate	More accurate
Superficial (easily examined)	Deep (difficult to be examined)

How to measure the JVP?

Clinically it can be measured as follows:

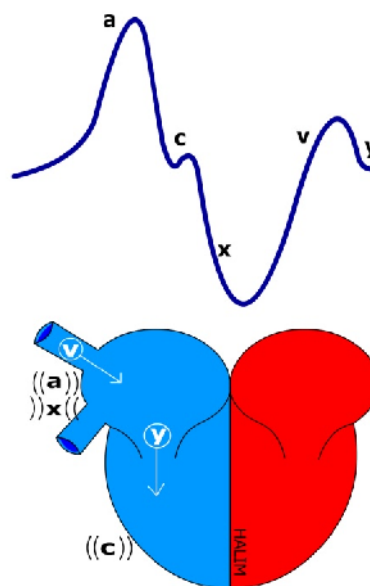
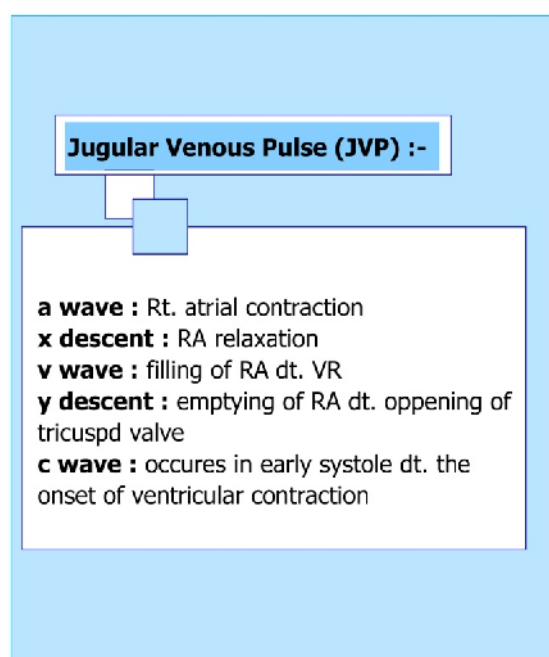
- Raise the trunk of the recumbent patient to 45 degrees
- Turn the pt. head slightly to the left
- Measure the vertical distance between the two points
- Lower point (Sternal angle)
- Upper point (Top of the blood column in the external jugular or top of the internal jugular waveforms.)

Normally, the JVP is 2-3 cm above the sternal angle which equals 7 cm above the RA.



The normal waves are:

- ✧ **a wave:** Rt atrial contraction
 - ✧ **x descent:** RA relaxation
 - ✧ **v wave:** filling to RA due to venous return (*during systole while the tricuspid valve is closed*)
 - ✧ **y descent:** emptying to the RA due to opening of the tricuspid during early diastole
- Normally the x descent (*venous collapse during systole*) = Systolic Collapse.
 - Normally there is inspiratory emptying of the neck veins



The abnormal wave forms:

- 1- **Absent a wave:** in Atrial Fibrillation due to absent atrial contraction.
- 2- **Prominent a wave (giant):** in forcible atrial contraction as in:
 - ✧ TS
 - ✧ PS
 - ✧ Pulmonary HTN
- 3- **Cannon a wave:** due to synchronous atrial and ventricle contraction
 - ✧ regularly occurring as in : nodal rhythm
 - ✧ occasionally occurring as in AV dissociation (CHB , VT)
- 4- **Systolic expansion:** The neck veins expand in systole (*coincides with arterial pulsations*)
 - ✧ TR.

✧ AF.

5- Causes of congested neck veins:



• NON PULSATING:

- ✧ Superior vena cava (SVC) thrombosis as in Behcet's disease
- ✧ SVC thrombosis as in porta cath insertion (catheter inserted in SVC for chemotherapy injection)
- ✧ SVC pressure by LN , aneurysm , or tumor (mediastinal syndrome)
- ✧ Minimal pulsations in severely congested neck veins as in constrictive pericarditis , cardiac tamponade

• PULSATING CONGESTED NECK VEINS:

- ✧ Right sided heart failure
- ✧ Tricuspid valve disease (TS, TR)
- ✧ Pericardial disease (effusion, constrictive pericarditis)
- ✧ Increased intrathoracic pressure (tension pneumothorax, emphysema)
- ✧ Increased intraabdominal pressure (ascites , pregnancy)
- ✧ Overtransfusion in patients with low urine output (acute renal failure)

Summary of Neck veins

- وضع المريض Semisitting 45°
- You should differentiate between carotid artery & jugular veins
(JV is lateral to sternomastoid, empties with inspiration & fills with straining)
- Measure the vertical distance between the sternal angle & upper most point of IJV waves or (topal EJV) Normally < 2cm if more → **congested**
- if you want to measure above right atrium → add 5 cm

• IJV waves

- a- Atrial contraction
- x. Atrial relaxation
- v. Venous retrun
- y. Emptying of right atrium on opening of tricuspid

• Special character:

- AF → absent a wave
- TR → systolic expansion of NV (normally systolic collapse)

3- Upper LIMB

1- Shape of hand:

- a- **Square** in cretinism
- b- **Claw hand**: extension of metacarpophalangeal joints and flexion of interphalangeal joints e.g. ulnar nerve palsy
- c- **Spade like hand** as in acromegally (see endocrinology)
- d- **Archnodactyly** (spider fingers) long tapering fingers as in Marfan syndrome
- e- **Polydactyly** .or **syndactyly** as in Laurence-Moon-Biedle syndrome
- f- **Dupuytern's contracture** : thickening and fibrosis of palmer fascia (flexion deformity of the fingers) mainly the ring finger. (alcohol)
- g- **Rest drop** as in radial nerve palsy and polyneuropathy
- h- **Rheumatoid hand**: see rheumatoid sheet
- i- **Tetanic hand**

2- Palm:

- 1) **Palmar erythema** in LCF
- 2) **Anemia especially** in palmar creases
- 3) **Sweating** (*Neurosis , Thyrotoxicosis*)
- 4) **Warm** as thyrotoxicosis and central cyanosis
- 5) **Cold** as in HF

3-Pulse: Radial, brachial, ulnar arteries

4-Tremors,

- ◆ **Fine tremors**: as in thyrotoxicosis, neurosis, hypoglycemia, parkinsonism, β_2 agonist.and familial tremors.
- ◆ **Coarse tremors (flapping tremors, astrexis)**: as in renal, hepatic or respiratory failure (*for more details see neurology*)

5- Nodules:

- a. **Osler's nodules**: small tender intradermal nodules, occur in subacute bacterial endocarditis (SBE) on the pulps of the fingers.



Osler's nodules

b. **Janway lesions** : bluish macules on the palm occur in SBE

c- **Heberden's nodules**: small nodules in the distal interphalangeal joints (osteophytes of osteoarthritis)

d- **Subcutaneous nodules** as in rheumatic fever and rheumatoid arthritis

e- **Gouty tophi**

6- Muscle and nerve : see neurology Sheet

5- Nail: Normally shiny, convex in lateral view and nail bed angle 160 degrees

✧ **Trophic changes:**

▪ in the form of loss of luster , striated, brittle nails

✧ **Leuconychia:**

▪ white nails in (hypoalbuminemia as in LCF)

✧ **Koilonychia:** (nail spoononing flat then concave in iron deficiency)

✧ **Capillary pulsation:** as in AI.

✧ **Cyanosis:** (see above)

✧ **Clubbing:** (see below)

✧ **Psoriasis** of the nail bed

4- Lower limbs

1- Edema

Press over 1 min over the medial malleolus or the chin of tibia then look to the extent, unilateral or bilateral, pitting or not.

Pitting	Non pitting
Low protein content	High protein content
HF, Nephritic syndrome	Lymphoedema
Pretibial Edema of Myxoedema	Pitting Edema



2-
Skin
for
trop
hic
chan



ges

as brittle nails , loss of hair , ulcers , cold skin, as in (LL ischemia, polyneuropathy)

3- **Pulsations**

dorsalis pedis, posterior tibial, popliteal and femoral arteries
(SEE PULSE EXAMINATION)

4- **Clubbing Of the Fingers**

⇒ **Definition:**

proliferation of the connective tissue under the nail bed *due to chronic progressive toxemia or hypoxia*, it is usually bilateral and symmetrical.

⇒ **Types:**

- ☑ **Toxic** (acyanotic)
- ☑ **Hypoxic** (cyanotic)

Aetiology	Toxic	Hypoxic
CVS	SBE	F3,F4, Eisenmienger
Pulmonary	SLS fibroid TB Bronchogenic carcinoma Pleural mesothelioma	COPD IPF (<i>interstitial pulmonary fibrosis</i>)
GIT	Ulcerative colitis Familial polyposis	Liver Cirrhosis 1ry biliary cirrhosis

	Bilharzial polyposis	
--	----------------------	--

Grades of clubbing:

Grade 1	Obliteration of the angle of the nail
Grade 2	Parrot peak
Grade 3	Drum stick
Grade 4	Drum stick + pulmonary osteoarthropathy

Fluctuation test:

- ✎ Place the finger on the pulp of the examiner's two thumbs and hold in this position by gentle pressure with the tips of the middle fingers over the proximal interphalangeal joint. Then palpate the finger over the base of the nail with tips of the examiner's two index fingers. When fluctuation is marked, palpation of the nail itself may give the impression that it is floating free on its bed.

Normally:

1. Slight degree of fluctuation could be detected in normal fingers
2. Increased long axis curvature of the finger nails may occur in normal subjects and is non-significant.

Window test:

- ✎ Ask the patient to approximate the dorsal surface of both finger nail opposite each other, normally, a window is seen, absence of such window suggest grade 1 clubbing with obliteration of nail bed angle.

Pulmonary osteoarthropathy

- ✎ Tender thickening of the ends of long bones especially the radius , ulna due to hypertrophy of the periosteum 2ry to periosteitis

